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Force Projection Technology Overview

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Force Projection Technology (FPT) MISSION



- AR 70-12: Serve as the DoD responsible agent for *all* ground fuels and lubricants specifications
- AR 700-136: *Lead* Lab for Water Supply and Wastewater Treatment
- Software National Depository Authority for the US Army on Military Load Classification for bridges, ferries, rafts, and vehicles

Multiple ONS
and JUONS

Execute total life cycle engineering for:

- Fuel Handling & Quality Surveillance Equipment
- Water Purification, Handling, & Quality Equipment
- Material Handling Equipment
- Tactical Military Bridging
- Combat Engineer (Construction) Equipment
- Mechanical Countermine & Counter IED Equipment
- Fuels and Lubricants

Co-located w/
LCMC partners

- Respond to MANSCEN (EN) and CASCOM (TC,OM) needs

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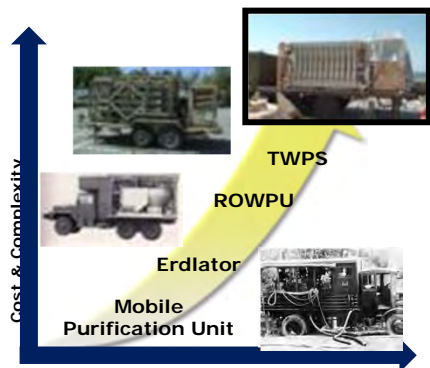
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Excellence in Force Projection Technology

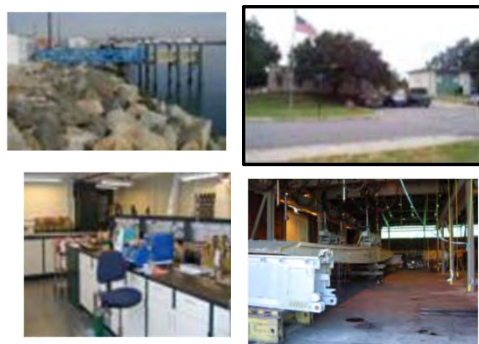


Water Supply



- AR 70-12 lead for ground fuels & lubes
- Lead DOD lab for water technology
- Military Load Classification
- International involvement
- Shaping requirements
- Component development & test

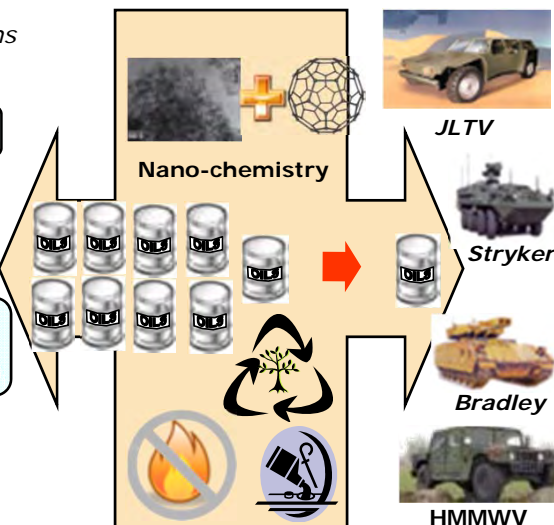
Labs & Facilities



POL Technology

Potential Applications

- Preservation
- Combustion
- Axles
- Transmissions
- Hydraulics
- Condition Based Maintenance
- Engines
- Radiators



Petroleum Supply



Combat Engineering and Material Handling Equipment

Bridging

Basic Building Blocks (Optimum Design)



Semi-autonomous control



Overload and Rollover Prevention Sensors



Hydraulic Hybrid Regeneration



Mechanical Countermine



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Technology Areas Supporting Force Projection Technology



Water Supply



Petroleum Supply



Mechanical Countermine



Next Generation Technologies

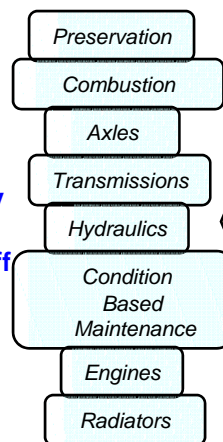
- Alternative Fuels
- Fuel Additive Technologies
- Fuel Efficient Powertrain Lubricant
- Nanotechnology for Fuels and Lubes
- Water from Air
- Water Reuse
- In-line Water Monitoring
- Fuel and Water Remote Quality and Quantity Surveillance
- Mechanical Countermine Increased Stand-off
- Mechanical Countermine Increased Mobility
- Structural Health Monitoring of Bridging
- Rapid Military Load Class Determination
- High Performance Materials for Lightweight Bridging & POL Storage Applications
- Priority Hydraulic System Combat Engineer (CE) & Hydraulic Hybrid Material Handling Equipment (MHE)
- Semi-Autonomous: CE, MHE, Bridging, Mechanical Countermine

Bridging

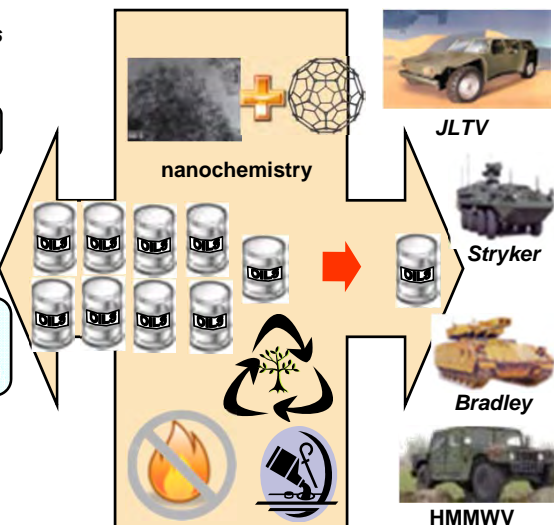
Basic Building Blocks (Optimum Design)



Potential Applications



POL Technology



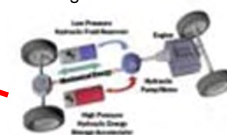
Combat Engineering and Material Handling Equipment

Semi-autonomous control

Overload and Rollover Prevention Sensors

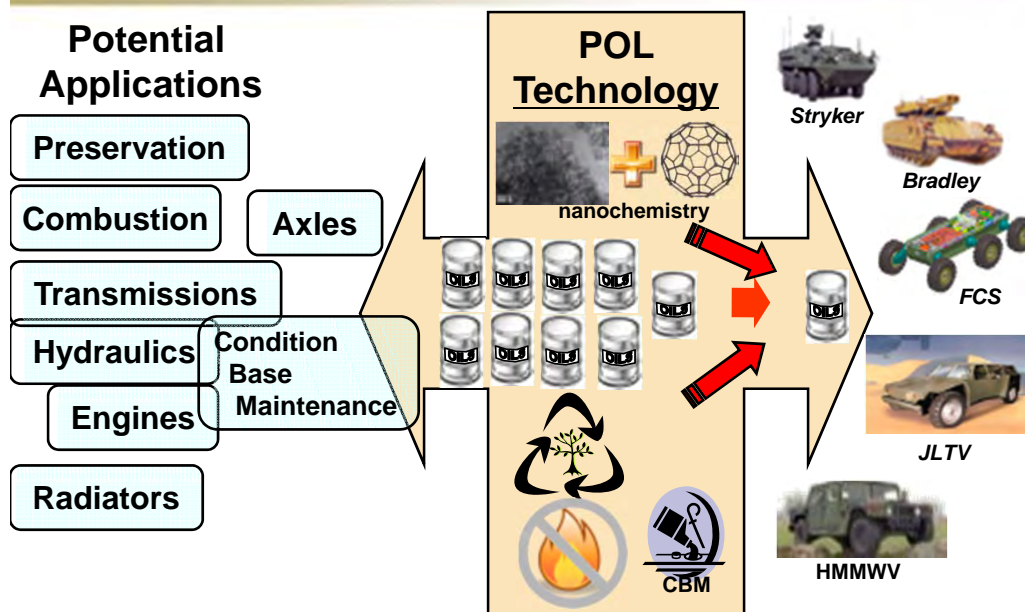


Hydraulic Hybrid Regeneration



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Purpose:

Provide superior and safer POL products that reduce logistic burden, maintenance requirements, and reduce fuel consumption

Products:

- ***Fire Resistant Fuel, Single Common Powertrain Lube (SCPL) in the Battlefield, Nano Lubricants and Fluids, Coolants that minimizes overheating occurrences, Additive to enhance field available products, Biobased fluids, Long life fluids***

Payoff:

- ***Reduce warfighter maintenance effort***
 - ***Reduce waste products***
 - ***Increase heat transfer of fluids to avoid overheating***
 - ***Increase fuel economy thus reducing volume of fuel needed or increasing range.***
 - ***Deploy Arctic-to-Desert without changing fluids***
- 



Schedule & Cost

MILESTONES	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
• SCPL Technology Feasibility								
• Develop SCPL product								
• Fire Resistant JP-8								
• Alternative Fuels								
• Nano fluids								
• Coolants: Bio & Increased Heat Transfer								
• Technologies to enable tactical fuels use								



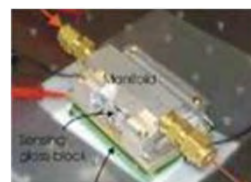
Water Production, Security, and Sustainment Research



WFA Systems



Current Monitoring



Future Monitoring

Schedule & Cost

MILESTONES	FY11	FY12	FY13	FY14	FY15	FY16	FY17
• Water From Air							
• Water Quality Monitoring							
• Water Reuse							
• Pre and Post Treatment							
• Desalination							

Purpose:

Next generation of water production, monitoring storage and distribution capabilities. Research in materials, technologies and modularity concepts. Development of mature technologies, manufacture prototypes, demonstrations and testing. Reduces logistics footprint and protect soldier from waterborne threats

Products:

- Water from Air System
- Real-time in situ or hand held water quality monitoring tools
- Water reuse systems
- Remote monitoring and asset visibility.
- Advanced, scalable water purification systems with new pretreatment, desalination and post treatment technologies.

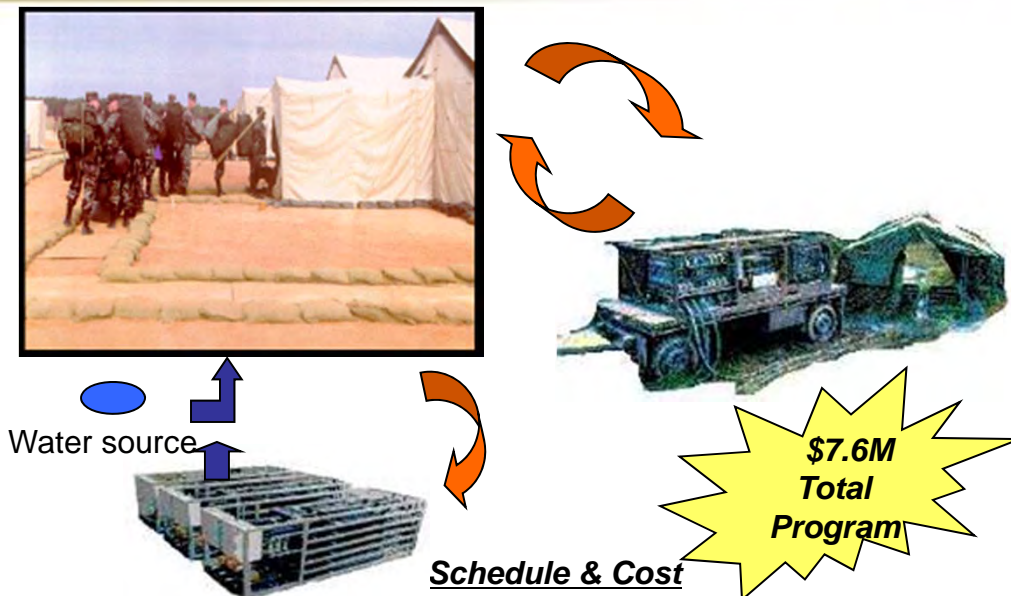
Payoff:

- Reduces the logistical footprint associated with water storage and distribution.
- Improve production and reliability while reducing weight and logistics
- Improve force protection and response to threat agents
- Transitions to PM FCS (BCT) and/or PM PAWS.

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FPT - Water Reuse



Purpose:

- Develop and integrate multiple technologies to produce compact, mobile, energy efficient systems capable of rapid start up that can eliminate black water and treat gray water to a level that enables reuse for non-potable applications.

The effort does this by identifying technology with the ability to implement energy from waste techniques and eliminate consumables and fouling

Products:

- A stand-alone wastewater treatment system
- A wastewater reuse technology that can be integrated into current CSS equipment to include:
 - Water Purification Systems
 - Shower and Laundry Systems
 - Field Feeding and Medical Systems

Payoffs:

- Reduces transportation assets required to haul wastewater and provide potable water
- Improves force protection at base camps
- Reduces health risks from wastewater associated vectors
- Supports the expeditionary base camp initiative

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Milestones (FY)	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Develop required technologies and perform bench-scale testing		Technology 4					
Integrate Technologies into demonstrator systems		Integration					
Demonstrator performance testing			Test/Report 5				
Downselect, modify & perform field evaluation				Test/Report 6			
Total: \$7.6M	1.8	3.1	1.1	1.1	0.5		



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